Identifying interactive components of the horse–rider partnership during competition dressage[1]

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Understanding the components of an effective horse-rider partnership is advantageous in developing and sustaining superior competition performance. Research that informs such understanding is limited because it has tended to rely on data from either horse or rider, but not from both simultaneously. Very few empirical studies have investigated physiological, psychological and behavioural factors involved in horse-rider interactions. The present study investigated whether anxiety and heart rate responses among competition dressage riders were associated with horse temperament, misbehaviour and heart rate. Seventeen horse-rider pairs competing in dressage competitions organised by the Equestrian Federation of Australia were studied. Riders completed the CSAI-2R and the horse HTI-R prior to commencing the dressage test. Heart rates of horse and rider prior to and during the test were recorded using polar S610 heart rate monitors. Horse misbehaviours (bucking, head tossing, shying , etc.) were subsequently coded by the researchers from video recordings of dressage performances. Thirteen of the 17 horse-rider pairs showed significant heart rate synchronisation (correlation) ($p \leq 0.01$) during the test. Rider ratings of horse misbehaviour correlated with the somatic anxiety scores of riders ($r=.50$, $p \leq 0.01$). Results of a stepwise discriminant function analysis showed that riders could be correctly classified into low vs high somatic anxiety groups with 70% accuracy ($F=7.87$, $p<0.01$) from horse temperament ratings, with more temperamental horses associated with higher somatic anxiety ratings by riders. Riders could be correctly classified into low vs high cognitive anxiety groups with 78% accuracy ($F=6.364$, $p<0.05$) from mean horse heart rate during the test, with higher horse heart rates associated with higher cognitive anxiety ratings by riders. No significant relationships between measured variables and dressage performance scores were identified, however. Findings suggest that riders' awareness and management of their experiences with their horses may promote effective physical and psychological competition preparation. **LP** The study showed that a dressage horse and rider can be in tune physiologically, as evidenced by similar heart rate profiles. Associations between horse heart rate, temperament, and misbehaviour and the anxiety responses of riders were demonstrated. Knowledge of these associations may assist riders to manage the physiological and psychological components of training their horses to achieve an effective partnership.

Reference as: Bridgeman, D.J., Pretty, G.M., & Terry, P.C. (2011). Identifying interactive components of the horse-rider partnership during competition dressage. In *Equitation science: Principles and practice. Proceedings of the 7th International Equitation Science Conference* (p.). Hooge Mierde, Holland: International Society for Equitation Science.

[1] This is a Poster Paper presented at ISES 2011: Equitation Science: Principles and Practices - Science at Work, 26-29 Oct 2011, Hooge Mierde, Netherlands.